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ABSTRACT

In recent years, various state education departments have recommended the use of portfolios, an alternative assessment measure, as a means by which teacher education programs focus, guide, and document teachers' progress toward specific standards for performance. This paper describes the design and development of a student assessment portfolio for teachers' professional development as part of a course on the evaluation and assessment of students. The process used to establish categories and standards for assessment of multi-ethnic and racially diverse learners is outlined. Also presented are preliminary data on 39 teachers' perceptions of their knowledge of assessment before and after a course on evaluation and assessment of students and these teachers' perceptions of how preparation of an assessment portfolio influences their assessment literacy. (Contains 6 tables and 11 references.) (SLD)

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Running head: Assessment Portfolios for Teachers' Professional Development

Meeting the Challenges to Urban School Reform:

Assessment Portfolios for Teachers' Professional Development

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Abstract

In recent years, various state education departments have recommended the use of portfolios, an alternative assessment measure, as a means by which teacher education programs focus, guide and document teachers' development of specific standards for performance. This paper describes the design and development of a student assessment portfolio for teachers' professional development, as part of a course on the evaluation and assessment of students. The process used to establish categories and standards for assessment of multi-ethnic and racially diverse learners is outlined. Also presented are preliminary data on teachers' perceptions of their knowledge of assessment, before and after, a course on evaluation and assessment of students, and teachers' perceptions of how preparation of an assessment portfolio influences their assessment literacy.

Meeting the Challenges to Urban School Reform:

Assessment Portfolios for Teachers' Professional Development

In the context of urban school reform, the prevailing view is that an interrelationship exists between all students' academic performance, including students who are educationally at-risk, and teachers' academic standards, professional preparation and accountability. This perspective has led to several recent and significant educational initiatives affecting the teaching -learning experience of both students and teachers. For students, government agencies at national, state and local levels have developed curriculum standards to "raise existing standards" to foster higher student achievement and instituted new testing programs to monitor the quality of the teaching-learning experience. In such high stakes environments, teachers' skills in measuring and monitoring students' achievement are increasingly challenged and become paramount and essential to the teaching-learning process. This greater emphasis on student testing and assessment represents a type of accountability measure where low test scores lead to potential negative consequences for teachers, students and school districts. Similarly, for teachers, state educational agencies have also developed other accountability measures such as teacher certification examinations to measure teachers' professional competencies. Teacher's scores, high and low, on these examinations may serve as indicators of the quality of university-based teacher education programs.

However, much controversy abounds on the use of a single test score as a measure of either student achievement or teacher competency. Consequently, in recent years, educational

measurement specialists have continually explored alternative assessment measures. One alternative assessment approach that has received much recent attention, in the context of school reform, is portfolio assessment. Teachers have been encouraged to use portfolios as a performance-based strategy to monitor and assess progress of their students over time. Various state education departments have mandated the use of portfolios as a means by which teacher education programs focus, guide and document teachers' development of specific professional standards. In addition, these portfolios would be used as evidence of teachers' expertise to inform hiring, performance and other personnel decisions. The purpose of this paper is to: (a) discuss the design and development of a student assessment portfolio for teachers' professional development, as part of a course on the evaluation and assessment of children; (b) describe the process of establishing categories and standards for assessment of multi-ethnic and racially diverse learners; (c) outline the artifacts or forms of evidence of standards-based professional development in the area of assessment of multi-ethnic and racially diverse learners; and, (d) present preliminary data on teachers' perceptions of their knowledge of assessment, before and after a course on evaluation and assessment of children, and teachers' perceptions of how preparation of an assessment portfolio influences their assessment literacy.

Design and Development of a Student Assessment Portfolio for Teachers' Professional Development

Research has shown that, although a high proportion of teachers' professional practice is spent on assessment-related activities (Stiggins, 1991), most teachers report feeling ill-prepared

(Ward, 1980) and lack the competencies necessary to assess students' progress in the attainment of instructional objectives. This may compromise their effectiveness in the teaching-learning process (Plake & Impara, 1998). A growing body of research, specifically examining teacher assessment literacy, indicates that teachers receive little or no formal assessment training in college preparatory programs and find assessment strategies in measurement courses inadequate for use in the classroom (Schaffer, 1993).

A recent collaborative effort of the American Federation of Teachers (AFT), the National Educational Association (NEA) and the National Council on Measurement in Education (NCME), developed and published seven "Standards for Teacher Competence in the Educational Assessment of Students" (AFT, NCME, NEA, 1990) A national survey was subsequently undertaken to measure, using a multiple-choice test, practicing teachers' actual knowledge of the seven competency areas, as specified in the standards. The results of the survey indicated low levels of assessment competencies for teachers, including teachers exposed to measurement coursework and with the longest tenure (Plake & Impara, 1998). Most importantly, this study strongly suggests that many teachers currently employed in various educational systems throughout the United Stated lack skills in the educational assessment of students. It also highlights the need for in-service training or other professional development strategies. Further, the school reform movement has increased the demand for teacher assessment literacy in monitoring and measuring student achievement, although teachers may not be adequately

prepared to assess students (Plake & Impara, 1998). Thus, as part of a course on evaluation and assessment of children, a student assessment portfolio assignment was designed to guide and document teachers' professional development in the area of student assessment literacy.

In recent years, teaching portfolios have been used increasingly as an instructional tool in teacher education programs, to document teachers' professional accomplishments attained over time (Wolf, 1996). The essential components of teaching portfolios include artifacts (e.g. documents related to teachers' and students' achievement) and written reflections. The format and design of the student assessment portfolio assignment, in the present paper, were adapted from Wolf (1996). As shown in Table 1, the student assessment portfolio assignment consisted of the following: (a) decorative cover page, on a three-ring loose-leaf view binder, related to a selected topic, (b) table of contents, (c) introduction of teacher, (d) description of target population, in terms of age and/or grade level, to be assessed and selected curriculum unit or topic, (e) preparation of intended learning outcomes (i.e. instructional goals and specific objectives) based upon Bloom's taxonomy in the cognitive domain, (f) preparation of test items for each instructional objective, (g) preparation of test specifications, (h) preparation of a checklist or rating scale for a subset of test items to monitor attainment of the instructional objectives, (i) children's completed tests and performance assessments, (j) reflective summary of children's performance on the test and performance assessment constructed by the teacher, and the extent to which the objectives were attained, and (k) reflective summary of the teachers' self-assessment of his/her skills employed in developing the test and performance assessment. The teachers developed the student assessment portfolio over the duration of the course for

approximately a period of three months. All parts of the assignment were reviewed and approved by the instructor prior to completion. It is evident, therefore, that this is a time-consuming and labor-intensive process for both the student and the instructor.

Process of Establishing Categories and Standards for Assessment of Multi-Ethnic and Racially Diverse Learners

Two sets of standards, as shown in Table 2, were used to establish the categories and standards for assessment of multi-ethnic and racially diverse learners. The first set of standards was the seven "Standards for Teacher Competence in the Educational Assessment of Students" that was developed and published collaboratively by the American Federation of Teachers (AFT), National Educational Association (NEA) and the National Council on Measurement in Education (NCME) (1990). These standards are summarized as follows: (a) "Choosing assessment methods appropriate for instructional decisions" (Gallagher, 1998, p.477) which includes use of measurement concepts of validity and error, knowledge of the relationship between assessment, instruction and making decisions about students, consideration of cultural, social, economic and language backgrounds of students, knowledge of resources for gathering information about and reviewing various assessment approaches and instruments, and various assessment options; (b) "Developing assessment methods appropriate for instructional decisions" (Gallagher, 1998, 478) which includes following appropriate measurement principles to develop and use assessment methods in teaching, selecting methods and techniques appropriate the teachers' intended learning outcomes and independently using student information to analyze the quality of assessment techniques; (c) "Administering, scoring, and interpreting the results of both

externally produced and teacher-produced assessment methods" (Gallagher, 1998, p. 479) which includes knowledge of standard scores and basic statistics, (d) "Using assessment results when making decisions about individual students, planning, teaching, developing curriculum, and school improvement" (Gallagher, 1998, p. 479); (d) "Developing valid pupil grading procedures which use pupil assessments" (Gallagher, 1998, p. 479); (e) "Communicating assessment results to students, parents and other lay audiences and other educators" (Gallagher, 1998, p. 479); and (f) "Recognizing unethical, illegal and otherwise inappropriate assessment methods and uses of assessment information" (Gallagher, 1998, p. 480) (AFT, NCME, NEA, 1990).

The second set of standards used to establish categories and standards for assessment of multi-ethnic and racially diverse learners was the American Psychological Association Standards for Educational and Psychological Tests (1974), Standards for Educational and Psychological Testing (1985) and Code of Fair Testing Practices in Education (1988).

Artifacts/Forms of Evidence of Standard-Based Professional Development in the Area of Assessment of Multi-Ethnic and Racially Diverse Learners

The content of the course on evaluation and assessment of students was also based upon the AFT, NCME, NEA (1990) standards for teacher competence in the educational assessment of students and APA (1974, 1985, 1988) standards for educational and psychological tests. The course was designed to explore eight major areas: (a) basic concepts and principles of

measurement and assessment, (b) preparation of instructional goals and objectives, (c) concepts of validity and reliability and other desired test characteristics, (d) classroom test construction, (e) measurement of complex achievement, (f) elementary statistics, (g) administration, use, and interpretation of standardized test and (h) alternative forms of assessment. The students' actual knowledge in these areas was assessed with a multiple-choice and essay midterm and final examination. The student assessment portfolio assignment added a standards-based and performance-based assessment as another dimension to the development of teacher assessment literacy. A performance assessment form was developed to monitor, guide and assess students' progress in completion of their student assessment portfolios. The artifacts or forms of evidence to be included in the portfolio, as shown in Table 3, were as follows: (a) the construction and administration of a test and performance assessment including the selection of a curriculum unit or topic, (b) preparation of learning outcomes (i.e. general goals and specific instructional objectives based upon Bloom's taxonomy), (c) preparation of test item, (d) demonstration of content validity, (e) preparation of a test blueprint, (f) development of a checklist to monitor the attainment of objectives, (g) preparation of a checklist or rubric for the performance assessment and (h) reflective summary of the children's performance on the assessment procedures, attainment of the objectives and the teachers' self-assessment of his/her skills in developing the test and performance assessment.

Preliminary Data on Teachers' Pre- and Post- Perceptions of Their Knowledge of Assessment and Preparation of a Student Assessment Portfolio

As part of the course on evaluation and assessment of children, the instructor modeled the assessment and instruction process. On the first day of class, a course syllabus, consisting of the content to be covered in the course and the goals and objectives of the course, were distributed to and discussed with the class. After discussing the course goals and objectives, the class participants were administered the Evaluation and Assessment of Children Self-Assessment Questionnaire (EACSAQ), which was designed by the instructor. The EACSAQ consisted of six assessment content areas:

1. I am knowledgeable of the basic concepts and principles in measurement and assessment.
2. I am knowledgeable of the role of measurement and assessment in the instructional Process.
3. I am able to formulate and write clear, precise and measurable objectives.
4. I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives.
5. I am able to calculate basic descriptive statistics.
6. I am able to apply basic statistics and measurement principles to interpret and use tests and assessment results properly in my classroom.

Class participants, in two class sections-001 and 002, were asked to rate their level of knowledge or skill in the six assessment content areas, as indicated in Tables 4 and 5, using a 5-point Likert scale (pre-assessment). The response scale was as follows: 5-very strong, 4-strong, 3-average, 2-weak and 1-very weak. The class participants were also asked to rate their level of knowledge or skill in the six assessment content areas at the end of the class (post-assessment).

Demographically, the class participants were predominantly female, multi-ethnic and -racial, with approximately half of the class with less than two years teaching experience, the other half with more than two years experience and a maximum of five years. Approximately one-third of the students had never taught before. Those who had teaching experience had taught in early childhood and elementary grades. Only two teachers had taught at the secondary level.

As indicated in Table 4, for the pre-assessment phase of the course, the students in course section 001, rated themselves in the weak range (i.e., < or = 2) in each of the six assessment content areas. The assessment content areas rated the highest, 2.7, for the pre-assessment phase were: Item 2, "I am knowledgeable of the role of measurement and assessment in the instructional process", and Item 3, "I am able to formulate and write clear, precise and measurable objectives". As shown in Table 5, for the preassessment phase of the course, the students in course section 003, rated themselves in the weak range in each of the six assessment content areas. The students assigned the highest rating, 2.9, to assessment content area, Item 3, "I am able to formulate and write clear, precise and measurable objectives". For both sections 001 and 003, the assessment content area rated the lowest was Item 6, "I am able to apply basic statistics and measurement principles to interpret and use tests and assessment results

properly in my classroom". Sections 001 rated Item 6, 2.0 and section 003, 1.9. These findings are congruent with the studies of Ward (1980) and Plake & Impara (1998) that teachers lack the competencies necessary to assess students' progress in the teaching-learning process.

For the post-assessment phase of the course, as indicated in Tables 4 and 5, students showed much improvement in the ratings of their knowledge and skill in the six assessment content areas, with ratings in the above average to strong range. For course section 001, the assessment content areas rated the highest, 4.2, were Item 3, "I am able to formulate and write clear, precise and measurable objectives." and Item 4, "I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives". The assessment content areas rated the next highest, 4.0, were Item 2, "I am knowledgeable of the role of measurement and assessment in the instructional process.", and Item 4, "I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives". For course section 003, the assessment content areas rated the highest, 4.1, was Item 3, "I am able to formulate and write clear, precise and measurable objectives". The next highest rating, 4.0, was Item 4, "I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives". Students in both sections 001 and 003 rated lowest, 3.3, Item 6, "I am able to apply basic statistics and measurement principles to interpret and use tests and assessment results properly in my classroom". The students' ratings of the assessment content areas suggests that they were more knowledgeable of Item 3, "I am able to formulate and write clear, precise and measurable objectives" and Item 4, "I am able to develop test items and other forms of assessment to

determine whether my students have attained instructional objectives". It is interesting to note that these two assessment content areas were an integral part of the preparation of the student assessment portfolio assignment.

In addition, as part of the evaluation of the course, students were asked what were the strengths of the course and areas to be strengthened in the course. Comments were also encouraged. For purposes of this discussion, only information relating to the portfolio assignment will be discussed. As shown in Table 6, students in sections 001 and 003 made both positive and negative qualitative comments. Overall, out of 39 students responding to the course evaluation, most of their comments were favorable toward the student assessment portfolio. Thirteen students stated that it was helpful; and fourteen indicated that they were more confident in constructing goals, objective and test items. The negative qualitative comments made by the students were that the portfolio was time consuming, difficult and tedious. These findings are consistent with Wolf's (1996) findings on developing teacher effective teaching portfolios.

In general, these preliminary data suggest that the student assessment portfolio can be a valuable and effective instructional tool used for measurement courses in teacher education programs. Future research is needed to quantify students' perceptions of student assessment portfolios and to determine the conditions under which this type of an assignment can be most effective in increasing teachers' assessment literacy. Also, more work is needed to address the practical and logistical aspects of guiding and monitoring students' preparation of student assessment portfolios.

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Table 1

Format of a Student Assessment

Portfolio for Teachers' Professional Development

Decorative Cover Page on a Three-Ring Viewbinder

Table of Contents

Introduction of Teacher

Description of Target Population (age/grade level) and Selected Curriculum Unit or Topic

Preparation of Intended Learning Outcomes (General Goals and Specific Instructional Objectives-Bloom)

Preparation of Test Items for Each Objective

Preparation of Test Specifications

Preparation of Checklists and Rating Scale to monitor the Attainment of Objectives

Preparation of Test and Performance Assessment from a Subset of Test Items

Children's Completed Tests and Performance Assessments

Reflective Summary of the Children's Performance on the Test and Performance Assessment, Attainment of the Objectives and Teachers' Self Assessment

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Table 2

Standards for Assessment of Multi-Ethnic and Racially Diverse Learners

Seven Standards for Teacher Competence in the Educational Assessment of Students (AFT, NEA, NCME, 1990)
Standards for Educational and Psychological Tests (APA, 1974)
Standards for Educational and Psychological Testing (APA, 1985;AERA, APA, NCME, 1999)
Code of Fair Testing Practices in Education (APA Joint Committee on Testing Practices, 1988)

Table 3

Artifacts/Forms of Evidence of Standards-Based Professional Development in the Assessment of Multi-Ethnic and Racially Diverse Learners

Components of Construction and Administration of a WrittenTest and Performance Assessment
Curriculum Unit or Topic
Learning Outcomes (General Goals and Specific Instructional Objectives based upon Bloom's Taxonomy)
A Variety of Content-Valid Test Items
Test Blueprint
Checklist to Monitor Attainment of Objectives
Checklist or Rubric for Performance Assessment
Reflective Summary of Children's Performance on the Test and Performance Assessment, Attainment of Objectives
Reflective Summary of Teachers' Self-Assessment of their Construction and Administration of the Written Test and Performance Assessment

Table 4

Teachers' (001) Pre- and Post-Mean Ratings of their Knowledge of and Skill in the Assessment of Students (N=23)

Variable	Pre *M*	Post *M*
1. I am knowledgeable of basic concepts and principles in measurement and assessment.	2.3	3.9
2. I am knowledgeable of the role of measurement and assessment in the instructional process.	2.7	4.0
3. I am able to formulate and write clear, precise and measurable objectives.	2.7	4.2
4. I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives.	2.3	4.2
5. I am able to calculate basic descriptive statistics.	2.3	3.7
6. I am able to apply basic statistics and measurement principles to interpret and use tests and assessment results properly in my classroom.	2.0	3.3

Table 5

Teachers' (003) Pre- and Post-Mean Ratings of Their Knowledge of and Skill in the Assessment of Students (N=16)

Variable	Pre *M*	Post *M*
1. I am knowledgeable of basic concepts and principles in measurement and assessment.	2.8	3.8
2. I am knowledgeable of the role of measurement and assessment in the instructional process.	2.7	3.8
3. I am able to formulate and write clear, precise and measurable objectives.	2.9	4.1
4. I am able to develop test items and other forms of assessment to determine whether my students have attained instructional objectives.	2.6	4.0
5. I am able to calculate basic descriptive statistics.	2.4	3.8
6. I am able to apply basic statistics and measurement principles to interpret and use tests and assessment results properly in my classroom.	1.9	3.3

Table 6

Teachers' Perceptions of Preparation of a Student Assessment Portfolio

Type of Qualitative Comments	N	Comment
Positive	4	I learned to make a valid test.
	13	Development of the portfolio was helpful.
	14	I am more confident constructing goals, objectives and test items.
	1	It facilitated student interaction.
	1	It defined objectives.
	1	I was able to write instructional objectives.
	1	I can create meaningful assessments.
	1	It is hands-on-learning.
	1	It allows teachers to strengthen skills in constructions of examinations.
	4	I am able to write instructional objectives.

Table 6 (Continued)

Teachers' Perceptions of Preparation of a Student Assessment Portfolio

Type of Qualitative Comments	N	Comment
Positive	1	I can follow through in the classroom.
	1	We can apply material we are learning.
	1	I found out what needs to be done to fairly assess students.
	1	Practice of writing objectives and test items was very important in helping to prepare me for the classroom.
	1	It helped in refining my planning skills as a teacher and also in developing test questions to match my lessons.
Negative	3	Time consuming.
	2	Difficult and tedious.